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10/571,296	11/14/2006	Haruo Yamashita	2006_0325A	6226

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EXAMINER	
LEIBY, CHRISTOPHER E	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/571,296	YAMASHITA ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER E. LEIBY	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9,10,12,14,15,17 and 21-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9,10,12,14,15,17 and 21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

1. **Claims 9-10, 12, 14-15, 17, and 21-25** are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9, 10, 14, 17, 21, and 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim describes a corresponding value of the output signal monotonically decreases as a corresponding value of the processed signal increases. Using the word corresponding in descriptions of the values of the output signal and processed signal insinuate the value is made up of parts such as bits. This would insinuate that a corresponding value of the signal that changes may be for example the signal comprising binary signal 0000 wherein the monotonic increase would be 0001, 0010 etcetera, this is neither described in the specification or assumed to be the intent of the amendment. Removing the word corresponding from the claims removes this rejection by placing specific weight onto the single value of the signal and not the make up of that value.

Further, **claims 9, 10, 21, and 23-25** are again rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the

invention. The claims describe that a value of the output signal decreases as the value of the processed signal increases. The only definition of the processed signal is that is it processed from the input signal which is from the target pixel. This definition provides where the signal originates from but no definition as the pertinence of such a signal. For example the processed signal may reflect a range of values from 1-10 dictating the amount of times the target pixel has been illuminated in some period of time or the processed signal may always reflect a random number always increasing or always decreasing even though its processed from the input signal. Without a definition the processed signal is seen to be anything that may come from the input signal but since the processed signal is required to increase as the output signal decreases this makes the claim indefinite since the processed signal is not described functionally in regards to the claimed invention. The rejection below is done interpreting the processed signal as an arbitrary increasing signal with no function. In particular to claim 14,

Claim 10 recites the limitations "image signal and processed signal" in itself. There is insufficient antecedent basis for this limitation in the claim. The visual processing unit is claimed to receive the above described signals. It is assumed the image signal refers to the input image signal and that the processed signal refers to the spatial processing however spatial processing is processing while a processed signal is a signal. The claimed subject matter must include language which states that the spatial processing creates a processed signals or something of that nature for correct antecedent basis. A further

problem exists that the spatial processing claimed is only described as being performed based on a plurality of pixels surrounding a target pixel without actually describing the spatial processing creating an identical problems to those described above in claims 9, 21, and 23-25. Again to further prosecution the processed signal and spatial processing are considered arbitrary signals increasing and processing with no function.

Claims 14 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not understood how a single value (the "corresponding" value of the output signal) may be "upwardly/downwardly" convex when a convex (upwardly/downwardly is in quotation since the addition of the word adds ambiguity to convex) signal or description requires multiple values to describe a convex object. The range of the output signal or even the output signal itself may be considered convex however a value of the output signal cannot be convex since it is a range of only a single value. The entire claim is indefinite for more than the reasons given however the root of the problem is described above, however no interpretation can be made by the examiner at this time. If the applicant intends to claim the function then simply claiming the function would be easier and clearer than describing how the values should look in a graph.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. The term broadening, in the context of the claim, is idiomatic English making the claim indefinite since it is not understood how a signal may be generated by broadening a difference or ratio between two signals.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 9-10, 12, and 21-25** rejected under 35 U.S.C. 103(a) as being obvious over **Hansen** (US Patent 6,069,597).

Regarding **independent claims 9, 21, and 23-25**, Hansen discloses a visual processing device/image display device, visual processing method (*abstract*), processor (*figure 8 reference 501*), and non-transitory computer –readable recording medium (*wherein figure 9 discloses hardware, a program is inherent to make the hardware work being stored on a medium for the hardware to use*) comprising:

a visual processing unit operable to (i) determine a conversion characteristic for in accordance with information on surroundings obtained from a plurality of pixels surrounding a target pixel of an input image signal, (ii) convert the target pixel in accordance with the determined conversion characteristic, and

(iii) output an output signal generated by performing visual processing to the image signal (*figure 4 reference 300 wherein one shot circuit 325 determines the length/conversion characteristic for an image signal in accordance with the ambient light as shown in figure 9 wherein the brightness voltage signal is created by a comparison circuit outputted to the brightness control circuitry, wherein the circuitry comprises PWM enable signals used to either control the brightness on length of the on time by the select rows or modify the display data through the data columns a selection of a modified row or column is a selection of a pixel and surrounding pixels*);

a display unit operable to display the output signal (*figure 3 reference 100 also shown as 125 in figure 2*); and

a parameter output unit operable to output an adjustment parameter determined according to ambient light (*figure 4, part of brightness circuitry shown in figure 9, reference 350 which outputs the parameter used to convert the pixel to an appropriate visual brightness, reference Row enable*,

wherein the output signal is generated by adjusting at least one of a brightness and a local contrast of the image signal based on the contrast between an average signal value of the plurality of pixels surrounding the target pixel and the value of the target pixel (*column 8 lines 21-37 wherein an average brightness of a pixel and surrounding pixels is calculated and adjusted*),

wherein the visual processing unit corrects a degree of the adjusting of the at least one of the brightness and the local contrast of the image signal based on the adjustment parameter output by the parameter output unit (*figure 9 reference*

wherein ambient light is inputted to brightness circuitry and used to modify/correct either row and column timings to adjust brightness column 14 lines 23-38), and

wherein the conversion characteristic is determined, such that within a predetermined input range of the image signal, and with respect to a specific value of the image signal, a corresponding value of the output signal monotonically decreases as a corresponding value of a processed signal, obtained by processing the input image signal, decreases (*figure 4 and figure 9 wherein if the ambient light increases the signal 312 increases increasing the on time of the row/column via output signal 216; further when the ambient light decreases the signal 312 also decreases; the row on time window is generated in respect to the brightness control circuitry 300 with the added/subtracted value of the ambient light sensor via the comparison circuit, column 8 lines 21-45, to the output signal 216*).

Hansen specifically discloses that the row on times (*output signal figure 4 reference 216*) decreases if the brightness voltage signal created by the output of the comparison circuit (*processed signal figure 9 reference 312*) also decreases. Further the output signal, 216, will always monotonically decrease when the corresponding processed signal, 312, decreases. Hansen describes that the brightness voltage signal increases and decreases respectively as the detected ambient light increases and decreases respectively.

It would have been obvious to one skilled in the art at the time of the invention that the method of which a brightness voltage signal reflects the value of the detected ambient light is of a design preference wherein the value may be inversely related to the ambient light making the processed signal increase as

the ambient light decreases making the output signal also decreasing enabling the benefit of a lower brightness voltage during prolonged periods of high ambient light (such as those prevalent in office buildings etc.)

Regarding **independent claim 10**, Hansen discloses a visual processing device comprising:

a spatial processing unit operable to (i) perform a predetermined spatial processing to an input image signal, the predetermined special processing being performed based on a plurality of pixels surrounding a target pixel of the image signal, and (ii) output a processed signal (*figure 4 wherein line 214 is for inputting a row clock signal used for a pixel and surrounding pixels, processed by one shot circuit 325 and converted/adjusted to a corresponding brightness average to the corresponding row/surrounding pixels and pixel, figure 9 reference 240 wherein the brightness signal adjusts a column/data/image signal of the pixel*);

a visual processing unit operable to receive the image signal and the processed signal as input, and output an output signal generated by performing visual processing to the image signal (*figure 9 reference 300 and figure 3 reference column driver wherein 300 receives brightness voltage signal which is processed into an image signal by column driver 240*); and

a parameter output unit operable to output an adjustment parameter determined according to ambient light (*figure 9 reference sensor 580 which outputs a parameter of ambient light 585*),

wherein the output signal is generated by adjusting at least one of the brightness and the local contrast of the image signal based on the adjustment

parameter output by the parameter output unit (*figure 9 reference wherein ambient light is inputted to brightness circuitry and used to modify/correct either row and column timings to adjust brightness*),

wherein the visual processing unit corrects a degree of the adjusting of the at least one of the brightness and the local contrast of the image signal based on the adjustment parameter output by the parameter output unit (*figure 9 reference wherein ambient light is inputted to brightness circuitry and used to modify/correct either row and column timings to adjust brightness column 14 lines 23-38*), and

wherein the visual processing unit has a processing characteristic, such that within a predetermined input range of the image signal, and with respect to a specific value of the image signal, a corresponding value of the output signal monotonically decreases as a corresponding value of the processed signal decreases (*figure 4 and figure 9 wherein if the ambient light increases the signal 312 increases increasing the on time of the row/column via output signal 216; further when the ambient light decreases the signal 312 also decreases; the row on time window is generated in respect to the brightness control circuitry 300 with the added/subtracted value of the ambient light sensor via the comparison circuit, column 8 lines 21-45, to the output signal 216*).

Hansen specifically discloses that the row on times (*output signal figure 4 reference 216*) decreases if the brightness voltage signal created by the output of the comparison circuit (*processed signal figure 9 reference 312*) also decreases. Further the output signal, 216, will always monotonically decrease when the corresponding processed signal, 312, decreases. Hansen describes that the

brightness voltage signal increases and decreases respectively as the detected ambient light increases and decreases respectively.

It would have been obvious to one skilled in the art at the time of the invention that the method of which a brightness voltage signal reflects the value of the detected ambient light is of a design preference wherein the value may be inversely related to the ambient light making the processed signal increase as the ambient light decreases making the output signal also decreasing enabling the benefit of a lower brightness voltage during prolonged periods of high ambient light (such as those prevalent in office buildings etc.).

Regarding **claim 12**, Hansen discloses a visual processing device, wherein the visual processing unit outputs an output signal generated by enhancing the brightness of the image signal based on the contrast between the processed signal and the image signal (*figure 9 reference 300 and 240 wherein a brightness signal converted to be applied to the column driver adjusts the pixel brightness image signal to be output by the column driver*), and increases the degree of enhancement of the brightness of the image signal as the brightness of the ambient light becomes high based on the adjustment parameter (*figure 9 reference ambient light (brightness control circuit 300 outputs a PWM signal in respect to the ambient light signal 585 and brightness voltage signal 312*).

Regarding claim 14, Hansen discloses a visual processing device, wherein the visual processing unit has a processing characteristic, such that within the predetermined input range of the image signal, and with respect to the specific value of the image signal, when the specific value of the image signal is

equal to the corresponding value of the processed signal, the corresponding value of the output signal is upwardly convex, such that

a degree that the corresponding value of the output signal upwardly convex increases as a brightness of the ambient light increases, such that the degree that the corresponding value of the output signal is upwardly convex is based on the adjustment parameter.

Regarding **claim 22**, Hansen discloses an image display device, wherein the parameter output unit comprises a brightness detection unit operable to detect the brightness of the display environment of the display unit, and output the adjustment parameter in accordance with the brightness of the display environment detected by the brightness detection unit (*figure 9 reference ambient light sensor*).

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment. This action is **final**.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER E. LEIBY whose telephone number is (571)270-3142. The examiner can normally be reached on 9 - 5 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CL

July 26th, 2010

/Henry N Tran/

Primary Examiner, Art Unit 2629